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10/735,697	12/16/2003	Sung-Jae Cho	P56999	3543

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Suite 300  
1522 K Street, N.W.  
Washington, DC 20005-1202

EXAMINER
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LAIOS, MARIA J

ART UNIT	PAPER NUMBER
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1795

MAIL DATE	DELIVERY MODE
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01/24/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/735,697

**Applicant(s)**

CHO, SUNG-JAE

**Examiner**

Maria J. Laios

**Art Unit**

1795

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Response to Amendment***

1. This office action is responsive to the amendment filed on 08 November 2007. Claims 1 and 11 have been amended. Claims 37 and 38 have been cancelled.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5, 13-17 and 25-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Tadamitsu et al. (JP 2002-334685).

Tadamitsu et al. disclose a secondary battery (1 in Figure 1). That includes a positive electrode plate, a negative electrode plate, and a separator interposed between the positive and negative electrode plates (paragraph 24). Tadamitsu et al. disclose a metallic electrically conducting can (1a in Figure 1 and paragraph 24). The can includes a side opening (1d in Figure 1). Tadamitsu et al. disclose a cap assembly including a cap plate (2) and an electrode port (7 in Figure 3). The cap plate is couple to the side opening of the can (1d) and the electrode port (7) is coupled to the cap plate (2) via a gasket (6 in Figure 3). The electrode port (7) is connected to the positive electrode plate (paragraph 36). Tadamitsu et al. disclose that the cap assembly has an aperture (2e) in a side portion of the cap plate (2) where a lead plate (4) is pressed into the aperture (2e) of the cap plate (2) adapted to a safety device (4a in Figure 3, as applied to claims 1 and 13).

Tadamitsu et al. disclose forming an electrode assembly, with a can arranged to accommodate the electrode assembly (paragraph 24). Tadamitsu et al. disclose forming a side opening (1d) in the can (1a in Figure 1). A cap assembly including a cap plate (2) and an electrode port (7) is formed. The cap plate (2) is coupled to the side opening (1d) of the can in Figure 1. Tadamitsu et al. disclose forming an aperture (2e) in a side portion of the cap plate (2 in Figure 3). The electrode port (7) is coupled to the cap plate (2 in Figure 3). Tadamitsu et al. disclose connection the electrode port 97) to the positive electrode plate (paragraph 36). The lead plate (4) is pressed into the aperture (2e) of the cap plate (5) and the lead plate (4) is connected to the safety device (4a in Figure 2, as applied to claim 25).

Tadamitsu et al. disclose that the cap plate (2) is made from aluminum (paragraph 25, as applied to claims 2, 14, and 26).

Tadamitsu et al. disclose that the lead plate (4) comprises nickel (paragraph 29, as applied to claims 3, 15, and 27).

Tadamitsu et al. disclose that the lead plate (4) and the safety device (4a) are connected via a port member (4b or 4c), the port member (4b or 4c) welded to the lead plate (4 in Figure 3 and paragraph 29, as applied to claims 4, 16, and 28).

Tadamitsu et al. discloses that the port member (4b or 4c) comprises nickel (paragraph 29, as applied to claims 5, 17, and 29).

4. Claims 7, 9, 12, 19, 21, 24, 31, 33 and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Masataka (JP 07-169506).

Masataka teaches a battery (1 in Figure 1, which inherently has an electrode assembly including a positive electrode plate, a negative electrode plate, and a separator interposed between the positive and negative electrode plates. Masataka teaches that the can (2) is metallic and electrically conducting (paragraph 17) and is adapted to accommodate the electrode assembly and an electrolytic solution in Figure 1. The can (2) has a cavity (2a) in the external bottom surface and has a side opening (near the other end of the case (2), which houses the battery (1)). Masataka teaches a lead plate (4a or 4b) to be pressed into the cavity (2a) of the can (2) and that the lead plate (4a or 4b) is connected to a safety device (3 in Figure 1, as applied to claims 7 and 19).

Masataka teaches forming an electrode assembly and forming an electrically conducting can, the can adapted to accommodate the electrode assembly (paragraph 20). Masataka teaches forming at least on cavity (2a) in the external bottom surface of the can (2). Masataka teaches forming a cap assembly and coupling the cap assembly to the side opening of the can (paragraph 24). Masataka teaches pressing a lead plate (4a or 4b) into the cavity (2a) of the can (2) and connecting the lead plate (4a or 4b) to a safety device (3 in Figure 1, as applied to claim 31).

Masataka teaches that the lead plate (4a or 4b) comprises nickel (paragraph 18, as applied to claims 9, 21, and 33).

Masataka teaches a cap plate adapted to be coupled to the side opening (1) of the can (2) and an electrode port adapted to be coupled to the cap plate via a gasket adapted to insulate the electrode port from the cap plate. Masataka teaches that the electrode port

is connected to the positive electrode plate (paragraphs 17 and 24, as applied to claims 12, 24, and 36).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 6, 18 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tadimitsu et al. (JP Publication Number 2002-334685) as applied to claims 1, 14, and 25 above, and further in view of Cho (U.S. Publication Number 2003/0077484 A1).

Tadimitsu et al. do not teach that the battery comprises a protecting case arranged between the electrode assembly and the cap assembly.

Cho teaches a protecting case (34 in Figure 3, as applied to claims 6 and 18).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the protecting case of Cho in the cap assembly of Tadimitsu et al. The protecting case is used to insulate the cap assembly from the electrode assembly and prevent a constant conduction between the two. By including a protection plate in the cap assembly of Tadimitsu et al. will ensure that the lead plate is the only point that will conduct the charge of the battery. This also ensures that if there is a problem with the lead, the attached safety device will be able to prevent conduction. Without this protecting plate, the battery would continue to conduct a charge even when it shouldn't.

7. Claims 8, 10, 11, 20, 22, 23, 32, 34, and 35 rejected under 35 U.S.C. 103(a) as being unpatentable over Masataka (JP Publication Number 07-169506) as applied to claims 7, 19, and 31 above, and further in view of Tadamitsu et al. (JP Publication Number 2002-334685).

The disclosure of Masataka with regard to claims 7, 19, and 31 has been discussed above and is incorporated herein.

Masataka does not teach that the can is made of aluminum or an aluminum alloy. Masataka does not teach that the lead plate and safety device are connected via a port member that is resistance welded to the lead plate or that the port member comprises nickel.

Tadamitsu et al. teach that the cap plate (2) is made from aluminum (paragraph 24, as applied to claims 8, 20, and 32).

Tadamitsu et al. disclose that the lead plate (4) and the safety device (4a) are connected via a port member (4b or 4c), the port member (4b or 4c) welded to the lead plate (4 in Figure 3 and paragraph 29, as applied to claims 10, 22, and 34).

Tadamitsu et al. discloses that the port member (4b or 4c) comprises nickel (paragraph 29, as applied to claims 11, 23, and 35).

It would have been obvious to one of ordinary skill in the art at the time of the invention to make the can of Masataka out of aluminum like the can of Tadamitsu et al. The material of the can is a matter of design choice and changing out materials. Both cans are made out of a metallic electrically conductive material. Therefore switching out the steel of Masataka for the aluminum of Tadamitsu et al. is only a matter of material choice and would be obvious to one of ordinary skill in the art.

It would have been obvious to one of ordinary skill in the art at the time of the invention to swap out the lead plate/safety device part of Masataka for the lead plate connected to the safety device via a port of Tadamitsu et al. Both are made up of lead plates comprising nickel and a safety device between two end lead plates. The overall product is similar and would serve the same purpose. The only difference is the way that the safety device is connected to the lead plates, in Tadamitsu et al. it is via a port member while in Masataka they appear to be welded together. Therefore because both of the lead plate/safety device parts are made out of the same material and serve the same function, it would be obvious to one of ordinary skill in the art to swap out one for the other.

#### ***Response to Arguments***

8. Applicant's arguments filed 08 November 2007 have been fully considered but they are not persuasive.

*Applicant argues that all references teach welding a lead plate to either the cap plate or external bottom surface of the can and that none of the references teach or suggest a lead plate adapted to be press into the aperture of the cap plate or cavity.*

#### **Masataka Reference**

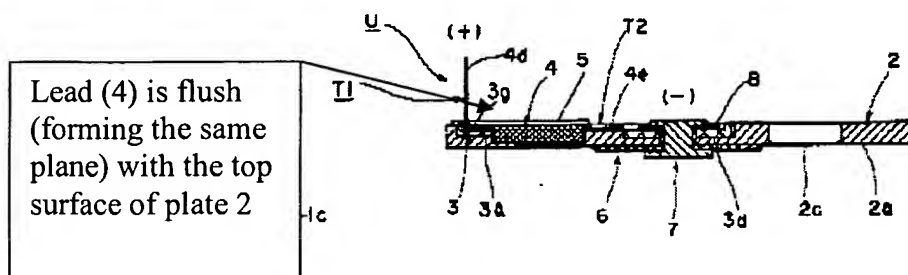
Figures 1 and 2 of the Masataka reference clearly shows the cavity (2a) and the lead plate (4a) in the cavity, thus the lead plate will have to be pressed into the cavity otherwise the lead plate would be out side of the cavity.

#### **Tadamitsu Reference**



Figures 2 and 3 of the Tadimitsu Reference clearly show an aperture (2e) in the cap plate (2) in which lead (4) is pressed into as better seen in Figure 2. Figure 2 shows the lead flush with the cap therefore it must be pressed into the opening.

【圖 2】



#### Cho Reference

The Cho Reference was not relied upon for a lead plate to be pressed into the aperture of the cap plate or the cavity in the bottom surface of the can. Cho was relied upon for the teaching of the protecting case in the battery.

Also the claims do not explicitly exclude welding from occurring to the lead plate before or after entering the cavity/aperture.

#### *Conclusion*

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

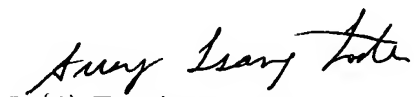
the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria J. Laios whose telephone number is 571-272-9808. The examiner can normally be reached on Monday - Thursday 9:30 - 6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MJL

  
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SUPERVISORY PATENT EXAMINER